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EXAMINER	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/676,273	LEVIN ET AL.	
	Examiner	Art Unit	
	BRIAN L. ALBERTALLI	2626	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *06 January 2009*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-20 and 28-34* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-20 and 28-34* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed 6 January 2009 have been fully considered but they are not persuasive.

Regarding the rejections of claims 4 and 14 under 35 U.S.C.112, 1st paragraph, applicant argues that the description of page 7, lines 9-13 is enabling for the claimed steps/means for correcting image blur resulting from portions of said surface being outside a depth of field of the third element. However, as identified in the previous office action, the cited sections of the specification simply discuss correcting the focus for the overall image ("a focus module 206 that estimates the amount of blur in the image and corrects for it"). As an alternative, an auto-focusing lens is described for correcting blur in the image. Both these techniques, however, correct for blur by refocusing *the entire image*. There is no support for the claimed steps/means for correcting image blur for *portions* of the surface being outside the depth of field (i.e. individually applying different blur corrections to different parts of the image). Therefore, these rejections are maintained.

Regarding the rejections of claims 6-10 and 16-20 under 35 U.S.C. 112, 1st paragraph, applicant argues that a mere mention of an auto-zoom feature at page 9, lines 1-7 is enabling for the steps of claims 6-10 and means of claims 16-20. However, the pertinent portion of the specification simply describes "a zoom feature along with

software to automatically scale in and focus on print media placed beneath the lens". There is nothing of record to indicate that such a feature must "necessarily" be performed by taking a first test image, analyzing the test image, and capturing a second image that differs from the test image. Many techniques for "auto-zoom" exist, and the specification does not provide any indication as to how the auto-zoom is performed.

Furthermore, these arguments do not address how the automatic zoom feature would perform correction for skewed images or distortion from capturing text from a curved surface as required by, e.g. claims 7 and 9. There is simply nothing the specification that describes how such distortions are corrected by capturing a test image and a second image that differs from the first image. Therefore, these rejections are maintained.

Regarding applicant's arguments that Myers et al. is not enabled because the details of the correction technique are described in more detail in a separate application, applicant is reminded that prior art is presumed to be enabling, and a rebuttal of such an assumption requires a preponderance of the evidence (see MPEP 716.07 and 2121). Furthermore, the additional reference cited by Myers et al. was provided *and explicitly described in the previous office action* (Myers et al., U.S. Patent 7,031,553, see page 25, Conclusion section of office action mailed 6 November 2008).

Additionally, while Myers et al. ('046) do not disclose the details of the correcting functions, Myers et al. ('553) does disclose these techniques. Additionally, Myers et al. ('553) disclose the correcting comprises converting individual portions to grayscale,

applying edge detection to the individual portions, and individually rotating the individual portions (see rejections below).

Regarding applicant's arguments with respect to the rejections of claims 21-26 and 28-31, applicant argues that Nakamisha does not disclose "storage storing a plurality of templates for identifying the layout format of text in an image". However, Nakamisha discloses (Fig. 35) an area separation unit 641 separates the image into areas including a zip code area, destination address area, and name area. The separated areas are then provided to a plurality of specialized separation units 643, 644, for processing the text in the areas (see column 22, lines 31-48). Therefore, Nakamisha et al. disclose identifying a name area format, destination address area format, zip code area format, etc. (*identifying the layout format of text in an image*) and separately recognizing each area using a unique separation unit for each area (*a plurality of templates*). Therefore, these rejections are maintained.

Finally, the newly added limitations of *converting individual portions to grayscale, applying an edge detection filter to the grayscale converted said individual portions,* and *thereafter individually rotating said individual portions to align with text respectively adjacent said individual portions* to independent claims 1 and 11 comprise new matter, and thus claims 1 and 11 are rejected under 35 U.S.C. 112, 1st paragraph below.

The specification describes the skew adjustment techniques on page 6, lines 6-16. The first technique identifies boundaries of a rectangular page and aligns the

boundaries in an orthogonal orientation. Clearly, this technique rotates the *entire image* to correct for overall skew in the image. Similarly, a technique of converting the image to grayscale, and applying an edge detection filter to the image is described. However, in this technique, once the textual regions are identified, skew is modified by rotating *the image* (not by rotating *the portions*). This indicates that, again, the entire image is rotated to correct for skew. The specification does not provide support, therefore, for individually rotating individual portions of the text identified in the image to correct for skew.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 1 and 11 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Claims 1 and 11 have been amended to recite *converting individual portions to grayscale, applying an edge detection filter to the grayscale converted said individual portions,* and *thereafter individually rotating said individual portions to align with text respectively adjacent said individual portions.* The specification describes the skew

adjustment techniques on page 6, lines 6-16. The first technique identifies boundaries of a rectangular page and aligns the boundaries in an orthogonal orientation. Clearly, this technique rotates the *entire image* to correct for overall skew in the image. Similarly, a technique of converting the image to grayscale, and applying an edge detection filter to the image is described. However, in this technique, once the textual regions are identified, skew is modified by rotating *the image* (not by rotating *the portions*). This indicates that, again, the entire image is rotated to correct for skew. The specification does not provide support, therefore, for individually rotating individual portions of the text identified in the image to correct for skew.

4. Claims 4 and 14 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Claims 4 and 14 are directed to removing image blur resulting from portions of a surface being located outside a depth of field of an image capturing element. Pages 6-7 of the originally filed specification describe the various image processing techniques applied prior to performing OCR on the text of the document. Specifically, page 6, line 17 to page 7, line 2 discusses distortions that arise from a surface (such a large bulge in a book). This section, however, only describes fixing warping that occurs from such a distortion (e.g. the letters nearer the bulge of the book will appear smaller and curvature

of the line of text may occur). There is no discussion of blurring (i.e. as related to focus) in this section. Page 7, lines 7-13 describes a focusing technique to reduce blurring. However, there is no indication that this focusing correction differentiates areas of the surface that are blurry due to a depth of field. Rather, it simply states that blur is removed from "the image".

Thus, specifically correcting focus from portions of a surface being located outside a depth of field is new matter not found in the originally filed disclosure.

5. Claims 6-10 and 16-20 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Claims 6-10 and 16-20 are directed to capturing a test image and a second image that differs from the test image to perform various corrections based on the two images. While the claims find support in the originally filed disclosure (i.e. the originally submitted claims) there is no description in the specification of taking a test image, let alone performing any processing based on a test image and a second image. Thus, any subject matter in the claims dealing with capturing and processing two different images is not enabled by the specification.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7. Claims 1 and 2 are rejected under 35 U.S.C. 103(a) as being unpatentable over Myers et al. (U.S. Patent 7,171,046), in view of Myers et al. (7,031,553).

In regard to claim 1, Myers et al. ('046) disclose a system (Fig. 1) for the automated, audible recitation of text arranged in a sequence of one or more words and displayed on a surface area defining an area having a height dimension and a width dimension, said area displaying more than one character of said text along each dimension (text regions within a captured image, column 4, line 60 to column 5, line 6), said system comprising:

a first element capable of distinguishing individual words in said sequence from an image of said surface (OCR processing recognizes words in the image, column 6, lines 24-35 and column 4, lines 6-7);

a second element capable of audibly reciting the words distinguished by said first element, in said sequence (text-to-speech synthesis is performed to audibly output the recognized words through a speaker, column 7, lines 60-63 and column 3, line 52);

a third element capable of capturing an image of said surface such that all characters of said text within said area are captured simultaneously (a camera captures

the image, thus capturing all the text simultaneously, column 4, lines 52-65 and column 3, lines 52-54); and

a fourth element capable of automatically processing said captured image so as to correct, without user interaction, for image distortion in a portion of said image resulting from capturing said image from a non-planar surface having at least a portion not parallel to that of an image sensor in said third element (corrective processing is applied to correct for imagery captured at an oblique angle, i.e. not parallel to that of the image sensor, column 5, lines 35-47), where said processing facilitates automated character recognition of text in a captured said image (OCR processing, column 6, lines 24-35).

Myers et al. ('046) further identify the processing to correct an image distortion resulting from the image having a non-planar surface is performed using the methods disclosed in Myers et al. ('553). However, Myers et al. ('046) do not specifically disclose the steps of:

converting individual portions to grayscale;

applying an edge detection filter to the grayscale-converted said individual portions; and

thereafter individually rotating said individual portions to align with text respectively adjacent said individual portions.

Myers et al. ('553) disclose a method for correcting an image distortion resulting from the image having a non-planar surface (text at an angle relative to the image plane, column 8, lines 49-59), comprising:

converting individual portions to grayscale (to detect text portions in the image, a grayscale version of the image is calculated, column 4, lines 1-10);

applying an edge detection filter to the grayscale-converted said individual portions (an edge operator is applied to detect the boundaries of the text portions and produce rectangles around the text portions, column 4, lines 8-29); and

thereafter individually rotating said individual portions to align with text respectively adjacent said individual portions (processing to adjust the text captured at an oblique angle is applied, column 4, lines 30-41; the corrective processing applied being computed independently for each line of text, column 9, lines 63-65).

Thus, Myers et al. ('046) and Myers et al. ('553) disclose each claimed step, the only difference between the claimed invention and the prior art being the lack of actual combination of the elements in a single prior art reference. One of ordinary skill in the art could have combined Myers et al. ('046) and Myers et al. ('553) by following the teachings of Myers et al. ('046) to use the corrective techniques of Myers et al. ('553). One of ordinary skill in the art at the time of invention would have recognized that the resulting combination would predictably provide an image capturing device with the ability to individually correct for image distortion resulting from portions of the image having a non-planar surface.

Additionally, it would have been obvious to one of ordinary skill in the art at the time of invention to combine Myers et al. ('046) and Myers et al. ('553) because portable text recognition devices often capture text at an oblique angle, therefore correcting for

such distortions would improve text detection and extraction, as suggested by Myers et al. ('553) (see column 1, lines 49-60).

In regard to claim 2, Myers et al. ('046) disclose said first element includes a programmable electronic dictionary (a lexicon for the OCR is automatically programmatically updated based on information context, column 6, line 59 to column 8, line 7).

8. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Myers et al. (U.S. Patent 7,171,046), in view of Myers et al. (U.S. Patent 7,031,553), and further in view of Wang et al. (U.S. Patent 5,680,478).

In regard to claim 3, Myers et al. ('046) and Myers et al. ('553) do not disclose said first element includes a spell checker.

Wang et al. disclose a character recognition device that includes a spell checker (spell-checking is performed on OCR text, column 9, lines 57-64).

It would have been obvious to one of ordinary skill in the art at the time of invention to modify Myers et al. ('046) and Myers et al. ('553) to include a spell checker, because this would increase reliability by ensuring that the recognized text formed real words.

9. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Myers et al. (U.S. Patent 7,171,046), in view of Myers et al. (U.S. Patent 7,031,553), and further in view of Hiroe et al. (U.S. Patent 7,088,853).

In regard to claim 5, Myers et al. ('046) and Myers et al. ('553) do not disclose said programmable electronic dictionary includes a phonetic module that automatically recites an estimated pronunciation of a word to a user for verification.

Hiroe et al. disclose a device for pronouncing words recognized from an image (see Abstract), comprising phonetic module that automatically recites an estimated pronunciation of a word to a user for verification (a new word is presented to a camera, whereupon an estimated pronunciation is presented to the user to verify if it is correct, column 13, lines 27-41 and column 13, line 60 to column 14, line 23).

It would have been obvious to one of ordinary skill in the art at the time of invention to modify Myers et al. ('046) and Myers et al. ('553) to include a phonetic module that automatically recites an estimated pronunciation of a word to a user for verification, because this would allow new words not present in the dictionary to be recognized an pronounced correctly, as suggested by Hiroe et al. (column 6, line 67 to column 7, line 29).

10. Claims 4, 6-12, and 14, and 16-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Myers et al. (U.S. Patent 7,171,046), in view of Myers et al. (U.S. Patent 7,031,553), and further in view of Nakashima et al. (U.S. Patent 6,721,465).

In regard to claim 4, Myers et al. ('046) and Myers et al. ('553) do not disclose said image distortion being correctable by said fourth element includes image blur resulting from portions of said surface being located outside a depth of field of said third element.

Nakashima et al. disclose a portable image capture and correction device (see Fig. 20) that corrects image distortions resulting from portions of a surface being located outside a depth of field of a third element (a focal correction takes several readings, including those outside the depth of field, i.e. focused above the document, and performs correction to achieve a correct focus, by correcting diffusion, column 16, lines 36-54 and column 17, lines 33-49).

It would have been obvious to one of ordinary skill in the art at the time of invention to modify Myers et al. ('046) and Myers et al. ('553) to correct image blur resulting from portions of a surface being located outside a depth of field of the third element, because correcting the blur resulting from portions of the surface being located outside the depth of field (a diffusion amount) improves the image quality, as taught by Nakashima et al., column 3, line 59 to column 4, line 11).

In regard to claim 6, Myers et al. ('046) and Myers et al. ('553) do not disclose said third element includes a processor having software that instructs said third element to capture a test image of at least a portion of said surface, analyze said test image, and based on said analysis, automatically, without user interaction, capture a second image that differs from said test image.

Nakashima et al. disclose a portable image capture and correction device (see Fig. 20) that that instructs a third element to capture a test image of at least a portion of said surface, analyze said test image, and based on said analysis, automatically, without user interaction, capture a second image that differs from said test image (see Fig. 23, a first image is taken at step 3004, then the lens is set to a second focal position at step 3006, and a second image is taken at step 3006, column 18, lines 16-39).

It would have been obvious to one of ordinary skill in the art at the time of invention to modify Myers et al. ('046) and Myers et al. ('553) to capture a test image of at least a portion of said surface, analyze said test image, and based on said analysis, automatically, without user interaction, capture a second image that differs from said test image, because taking multiple images allows image correction to be performed that reduces the distortion of the image, as taught by Nakashima et al. (column 17, line 66 to column 18, line 15).

In regard to claim 7, Myers et al. ('046) and Myers et al. ('553) do not disclose said second image corrects for a skewed test image.

Nakashima et al. disclose said second image corrects for a skewed test image (tilt is corrected, column 17, lines 54-64).

It would have been obvious to one of ordinary skill in the art at the time of invention to modify Myers et al. ('046) and Myers et al. ('553) to correct for a skewed test image based on said second image, because such processing reduces distortion in

the image in a low cost manner, as taught by Nakashima et al. (column 17, line 66 to column 18, line 15).

In regard to claim 8, Myers et al. ('046) and Myers et al. ('553) do not disclose said second image is more focused than said test image.

Nakashima et al. disclose said second image is more focused than said test image (see Fig. 23, a first reading is taken at a first focus and a second reading is taken at a second focus, column 18, lines 16-39).

It would have been obvious to one of ordinary skill in the art at the time of invention to modify Myers et al. ('046) and Myers et al. ('553) to focus said second image more than said first image, because such processing reduces distortion in the image in a low cost manner, as taught by Nakashima et al. (column 17, line 66 to column 18, line 15).

In regard to claim 9, Myers et al. ('046) and Myers et al. ('553) do not disclose said second image corrects for a distortion in the test image resulting from capturing text from a curved surface.

Nakashima et al. disclose said second image corrects for a distortion in the test image resulting from capturing text from a curved surface (geometric deformation of a document that was originally flat, i.e. curving of the surface, is corrected for, column 17, lines 54-64 and column 12, lines 54-57).

It would have been obvious to one of ordinary skill in the art at the time of invention to modify Myers et al. ('046) and Myers et al. ('553) to correct for a distortion in the test image resulting from capturing text from a curved surface, because such processing reduces distortion in the image in a low cost manner, as taught by Nakashima et al. (column 17, line 66 to column 18, line 15).

In regard to claim 10, Myers et al. ('046) and Myers et al. ('553) do not disclose said second image is a portion of said first image.

Nakashima et al. disclose said second image is a portion of said first image (i.e. the portion at a second focal length, see column 18, lines 16-38).

It would have been obvious to one of ordinary skill in the art at the time of invention to modify Myers et al. ('046) and Myers et al. ('553) so that said second image was a portion of said first image, because such processing reduces distortion in the image in a low cost manner, as taught by Nakashima et al. (column 17, line 66 to column 18, line 15).

In regard to claim 11, Myers et al. ('046) disclose a system (Fig. 1) for the automated, audible recitation of text arranged in a sequence of one or more words and displayed on a surface area defining an area having a height dimension and a width dimension, said area displaying more than one character of said text along each dimension (text regions within a captured image, column 4, line 60 to column 5, line 6), said system comprising:

a first element capable of distinguishing individual words in said sequence from an image of said surface (OCR processing recognizes words in the image, column 6, lines 24-35 and column 4, lines 6-7);

a second element capable of audibly reciting the words distinguished by said first element, in said sequence (text-to-speech synthesis is performed to audibly output the recognized words through a speaker, column 7, lines 60-63 and column 3, line 52);

a third element capable of capturing an image of said surface such that all characters of said text within said area are captured simultaneously (a camera captures the image, thus capturing all the text simultaneously, column 4, lines 52-65 and column 3, lines 52-54); and

a fourth element capable of automatically processing said captured image so as to correct, without user interaction, for image distortion in a portion of said image resulting from capturing said image from a non-planar surface having at least a portion not parallel to that of an image sensor in said third element (corrective processing is applied to correct for imagery captured at an oblique angle, i.e. not parallel to that of the image sensor, column 5, lines 35-47), where said processing facilitates automated character recognition of text in a captured said image (OCR processing, column 6, lines 24-35).

Myers et al. ('046) further identify the processing to correct an image distortion resulting from the image having a non-planar surface is performed using the methods disclosed in Myers et al. ('553). However, Myers et al. ('046) do not specifically disclose the steps of:

converting individual portions to grayscale;

applying an edge detection filter to the grayscale-converted said individual portions; and

thereafter individually rotating said individual portions to align with text respectively adjacent said individual portions.

Myers et al. ('553) disclose a method for correcting an image distortion resulting from the image having a non-planar surface (text at an angle relative to the image plane, column 8, lines 49-59), comprising:

converting individual portions to grayscale (to detect text portions in the image, a grayscale version of the image is calculated, column 4, lines 1-10);

applying an edge detection filter to the grayscale-converted said individual portions (an edge operator is applied to detect the boundaries of the text portions and produce rectangles around the text portions, column 4, lines 8-29); and

thereafter individually rotating said individual portions to align with text respectively adjacent said individual portions (processing to adjust the text captured at an oblique angle is applied, column 4, lines 30-41; the corrective processing applied being computed independently for each line of text, column 9, lines 63-65).

Thus, Myers et al. ('046) and Myers et al. ('553) disclose each claimed step, the only difference between the claimed invention and the prior art being the lack of actual combination of the elements in a single prior art reference. One of ordinary skill in the art could have combined Myers et al. ('046) and Myers et al. ('553) by following the teachings of Myers et al. ('046) to use the corrective techniques of Myers et al. ('553).

One of ordinary skill in the art at the time of invention would have recognized that the resulting combination would predictably provide an image capturing device with the ability to individually correct for image distortion resulting from portions of the image having a non-planar surface.

Additionally, it would have been obvious to one of ordinary skill in the art at the time of invention to combine Myers et al. ('046) and Myers et al. ('553) because portable text recognition devices often capture text at an oblique angle, therefore correcting for such distortions would improve text detection and extraction, as suggested by Myers et al. ('553) (see column 1, lines 49-60).

While Myers et al. ('046) and Myers et al. ('553) disclose said third element is a digital camera, Myers et al. ('046) and Myers et al. ('553) are silent as to the details of the image capturing portion.

Nakashima et al. disclose a portable image capture and correction device (see Fig. 20) that includes a third element comprising:

an array of light-sensitive members that each convert light incident on said members to respective electromagnetic signals (CCD sensor, column 17, lines 8-10);

a lens capable of focusing an image on said array (lens, column 17, lines 8-10); and

a circuit capable of receiving said respective electromagnetic signals and creating an electronic image associated with said image (the CCD further creates the digital images, column 17, lines 8-10).

It would have been obvious to one of ordinary skill in the art at the time of invention to include a standard array of light sensitive members, a lens, and circuit to create a digital image in Myers et al. ('046) and Myers et al. ('553), because it would allow a quality image could be captured.

In regard to claim 12, Myers et al. ('046) disclose said first element includes a programmable electronic dictionary (a lexicon for the OCR is automatically programmatically updated based on information context, column 6, line 59 to column 8, line 7).

In regard to claim 14, Myers et al. ('046) and Myers et al. ('553) do not disclose said image distortion being correctable by said fourth element includes image blur resulting from portions of said surface being located outside a depth of field of said third element.

Nakashima et al. disclose a portable image capture and correction device (see Fig. 20) that corrects image distortions resulting from portions of a surface being located outside a depth of field of a third element (a focal correction takes several readings, including those outside the depth of field, i.e. focused above the document, and performs correction to achieve a correct focus, by correcting diffusion, column 16, lines 36-54 and column 17, lines 33-49).

It would have been obvious to one of ordinary skill in the art at the time of invention to modify Myers et al. ('046) and Myers et al. ('553) to correct image blur

resulting from portions of a surface being located outside a depth of field of the third element, because correcting the blur resulting from portions of the surface being located outside the depth of field (a diffusion amount) improves the image quality, as taught by Nakashima et al., column 3, line 59 to column 4, line 11).

In regard to claim 16, Myers et al. ('046) and Myers et al. ('553) do not disclose said third element includes a processor having software that instructs said third element to capture a test image of at least a portion of said surface, analyze said test image, and based on said analysis, automatically, without user interaction, capture a second image that differs from said test image.

Nakashima et al. disclose a portable image capture and correction device (see Fig. 20) that that instructs a third element to capture a test image of at least a portion of said surface, analyze said test image, and based on said analysis, automatically, without user interaction, capture a second image that differs from said test image (see Fig. 23, a first image is taken at step 3004, then the lens is set to a second focal position at step 3006, and a second image is taken at step 3006, column 18, lines 16-39).

It would have been obvious to one of ordinary skill in the art at the time of invention to modify Myers et al. ('046) and Myers et al. ('553) to capture a test image of at least a portion of said surface, analyze said test image, and based on said analysis, automatically, without user interaction, capture a second image that differs from said test image, because taking multiple images allows image correction to be performed

that reduces the distortion of the image, as taught by Nakashima et al. (column 17, line 66 to column 18, line 15).

In regard to claim 17, Myers et al. ('046) and Myers et al. ('553) do not disclose said second image corrects for a skewed test image.

Nakashima et al. disclose said second image corrects for a skewed test image (tilt is corrected, column 17, lines 54-64).

It would have been obvious to one of ordinary skill in the art at the time of invention to modify Myers et al. ('046) and Myers et al. ('553) to correct for a skewed test image based on said second image, because such processing reduces distortion in the image in a low cost manner, as taught by Nakashima et al. (column 17, line 66 to column 18, line 15).

In regard to claim 18, Myers et al. ('046) and Myers et al. ('553) do not disclose said second image is more focused than said test image.

Nakashima et al. disclose said second image is more focused than said test image (see Fig. 23, a first reading is taken at a first focus and a second reading is taken at a second focus, column 18, lines 16-39).

It would have been obvious to one of ordinary skill in the art at the time of invention to modify Myers et al. ('046) and Myers et al. ('553) to focus said second image more than said first image, because such processing reduces distortion in the

image in a low cost manner, as taught by Nakashima et al. (column 17, line 66 to column 18, line 15).

In regard to claim 19, Myers et al. ('046) and Myers et al. ('553) do not disclose said second image corrects for a distortion in the test image resulting from capturing text from a curved surface.

Nakashima et al. disclose said second image corrects for a distortion in the test image resulting from capturing text from a curved surface (geometric deformation of a document that was originally flat, i.e. curving of the surface, is corrected for, column 17, lines 54-64 and column 12, lines 54-57).

It would have been obvious to one of ordinary skill in the art at the time of invention to modify Myers et al. ('046) and Myers et al. ('553) to correct for a distortion in the test image resulting from capturing text from a curved surface, because such processing reduces distortion in the image in a low cost manner, as taught by Nakashima et al. (column 17, line 66 to column 18, line 15).

In regard to claim 20, Myers et al. ('046) and Myers et al. ('553) do not disclose said second image is a portion of said first image.

Nakashima et al. disclose said second image is a portion of said first image (i.e. the portion at a second focal length, see column 18, lines 16-38).

It would have been obvious to one of ordinary skill in the art at the time of invention to modify Myers et al. ('046) and Myers et al. ('553) so that said second image

was a portion of said first image, because such processing reduces distortion in the image in a low cost manner, as taught by Nakashima et al. (column 17, line 66 to column 18, line 15).

11. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Myers et al. (U.S. Patent 7,171,046), in view of Myers et al. (U.S. Patent 7,031,553), further in view of Nakashima et al., and further in view of Wang et al.

In regard to claim 13, Myers et al. ('046), Myers et al. ('553) and Nakashima et al. do not disclose said first element includes a spell checker.

Wang et al. disclose a character recognition device that includes a spell checker (spell-checking is performed on OCR text, column 9, lines 57-64).

It would have been obvious to one of ordinary skill in the art at the time of invention to modify Myers et al. ('046), Myers et al. ('553) and Nakashima et al. to include a spell checker, because this would increase reliability by ensuring that the recognized text formed real words.

12. Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Myers et al. (U.S. Patent 7,171,046), in view of Myers et al. (U.S. Patent 7,031,553), further in view of Nakashima et al., and further in view of Hiroe et al. (U.S. Patent 7,088,853).

In regard to claim 15, Myers et al. ('046), Myers et al. ('553) and Nakashima et al. do not disclose said programmable electronic dictionary includes a phonetic module that automatically recites an estimated pronunciation of a word to a user for verification.

Hiroe et al. disclose a device for pronouncing words recognized from an image (see Abstract), comprising phonetic module that automatically recites an estimated pronunciation of a word to a user for verification (a new word is presented to a camera, whereupon an estimated pronunciation is presented to the user to verify if it is correct, column 13, lines 27-41 and column 13, line 60 to column 14, line 23).

It would have been obvious to one of ordinary skill in the art at the time of invention to modify Myers et al. ('046), Myers et al. ('553) and Nakashima et al. to include a phonetic module that automatically recites an estimated pronunciation of a word to a user for verification, because this would allow new words not present in the dictionary to be recognized an pronounced correctly, as suggested by Hiroe et al. (column 6, line 67 to column 7, line 29).

13. Claims 28-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nakashima et al., in view of Myers et al. (U.S. Patent 7,171,046).

In regard to claim 28, Nakashima et al. disclose a cell phone (Fig. 32, pocket telephone 1925, column 21, lines 27-29), comprising:

a body portion containing a keypad (see Fig. 32), an audio receiver and an audio transmitter (a telephone necessarily includes a speaker and microphone for receiving and transmitting audio);

a digital camera in said body portion having an outwardly facing lens (sensor 1920, column 21, lines 29-32);

a processor capable of receiving an image containing a text sequence from said digital camera and distinguishing words in said sequence (see Figs. 36A-D, character recognition is performed on various areas, column 22, lines 49-60);

storage storing a plurality of templates for identifying the layout format of text in an image captured by said digital camera (see Figs. 36A-D, an image analysis unit determines different character areas from provided layout, column 22, lines 31-60).

Nakashima et al. do not disclose causing said audio transmitter to recite said individual words in said sequence.

Myers et al. disclose an electronic device including an audio device capable of audibly reciting said words in said sequence (text-to-speech synthesis is performed to audibly output words recognized by OCR through a speaker, column 7, lines 60-63 and column 3, line 52).

It would have been obvious to one of ordinary skill in the art at the time of invention to modify Nakashima et al. to include an audio device capable of audibly reciting said words in said sequence, because outputting the recognized words audibly provides a plurality of applications, such as, e.g. aiding visually impaired individuals, as suggested by Myers et al. (column 2, lines 21-29).

In regard to claim 29, while Nakashima et al. disclose saving templates for identifying the layout format of text in an image, Nakashima et al. and Myers et al. do not specifically disclose one of the templates is in the layout format of a menu.

Myers et al. disclose menus are a common image that are captured for audible recitation in a portable electronic device (see column 4, lines 42-51, naming several common images that would be captured by a portable electronic device).

It would have been obvious to one of ordinary skill in the art at the time of invention to modify Nakashima et al. and Myers et al. to include a menu template in the plurality of templates, because this would ensure there was a template that would match a commonly applied application for the portable electronic device (i.e. reading menus).

In regard to claim 30, Nakashima et al. disclose said processor is capable of correcting for at least one of a skew, blur, and distortion (tilt, diffusion, and geometric deformation, column 17, lines 44-64).

In regard to claim 31, Nakashima et al. disclose said processor includes a page prompt module that is capable of identifying a page number in the header or footer of an image, and prompting the audio device to recite a warning to a user if the apparatus receives images of pages of text in nonsequential order (a book that is continuously read is scanned at the upper or lower part of the image to detect page numbers, and if a page is skipped, prior to capturing the image, the user is warned audibly, column 19, line 61 to column 20, line 16).

14. Claim 32 is rejected under 35 U.S.C. 103(a) as being unpatentable over Nakashima et al., in view of Myers et al. (U.S. Patent 7,171,046), and further in view of Fujimoto et al. (U.S. Patent Application Publication 2002/0031264).

In regard to claim 32, while Nakashima et al. disclose saving templates for identifying the layout format of text in an image, Nakashima et al. and Myers et al. do not specifically disclose at least one of said templates is in the layout format of a newspaper.

Fujimoto et al. disclose an electronic device for capturing images to be recognizes, wherein the layout format of the image is determined, including the layout format of a newspaper (see Fig. 1, a newspaper image's layout is determined, page 3 paragraph 60).

It would have been obvious to one of ordinary skill in the art at the time of invention to modify Nakashima et al. and Myers et al. to include a template for a layout format of a newspaper, because determining the layout of newspaper text is advantageous for recognizing characters in the newspaper, as taught by Fujimoto et al. (page 1, paragraph 3).

15. Claim 33 is rejected under 35 U.S.C. 103(a) as being unpatentable over Nakashima et al., in view of Myers et al. (U.S. Patent 7,171,046), and further in view of Piehn et al. (U.S. Patent Application Publication 2001/0056342).

In regard to claim 33, while Nakashima et al. disclose saving templates for identifying the layout format of text in an image, Nakashima et al. and Myers et al. do not specifically disclose one of said templates corresponds to a phone book.

Piehn et al. disclose portable device for audibly reciting words recognized in an image (see Abstract), wherein phone books are a common image captured for audible recitation by the device (see page 3, paragraph 28, naming several common images that would be captured by a portable electronic device).

It would have been obvious to one of ordinary skill in the art at the time of invention to modify Nakashima et al. and Myers et al. to include a phone book layout template, because this would ensure there was a template that would match a commonly applied application for the portable electronic device (i.e. reading phone books).

16. Claim 34 is rejected under 35 U.S.C. 103(a) as being unpatentable over Nakashima et al., in view of Myers et al. (U.S. Patent 7,171,046), in further view of Piehn et al., and further in view of Maes et al. (U.S. Patent 7,092,496).

In regard to claim 34, Nakashima et al., Myers et al., and Piehn et al. do not disclose the cell phone includes a button and said one of said templates instructs said processor to dial the phone number of a phone book entry being recited when the user presses the button.

Maes et al. disclose a cell phone that includes a button (Key for providing keyed-in command) that instructs a processor to dial the phone number of a phone book entry

being recognized when the user presses said button (a user instructs the phone, via a keyed-in command, to visually recognize a phone number and automatically dial the number that is recognized, see column 9, lines 59-67 and specific visual application at column 10, lines 48-62).

It would have been obvious to one of ordinary skill in the art at the time of invention to further modify Nakashima et al., Myers et al., and Piehn et al. to instruct the processor to dial the phone number of a phone book entry being recited when the user pressed the button, because this would provide a user a convenient, "one-touch" method for capturing and dialing a phone number out of a phone book.

Conclusion

17. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL.** See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

18. Any inquiry concerning this communication or earlier communications from the examiner should be directed to BRIAN L. ALBERTALLI whose telephone number is (571)272-7616. The examiner can normally be reached on Monday-Thursday, 8 AM to 6:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Hudspeth can be reached on (571) 272-7843. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/David R Hudspeth/
Supervisory Patent Examiner, Art Unit 2626

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